

JOINT MESSAGEFORM

SECURITY CLASSIFICATION

SPACE BELOW RESERVED FOR COM

1960 JUL 1 23 11

PRECEDENCE	TYPE MSG (Check)	ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION: OPERATIONAL IMMEDIATE	MULTI SINGLE			
INFO: OPERATIONAL IMMEDIATE				
FROM:				

CHIEF, AFBMD FIELD OFFICE, VAFB, CALIF

TO: HQ AFBMD, LOS ANGELES 45, CALIF

HQ 6594TH TEST WING (SATELLITE), SUNNYVALE, CALIF

LOCKHEED MISSILES & SPACE DIV, SUNNYVALE, CALIF

LOCKHEED MISSILES & SPACE DIV, VAFB, CALIF (COURIER)

DOUGLAS AIRCRAFT COMPANY, VAFB, CALIF (COURIER)

INFO: 1ST MISSILE DIVISION, VAFB, CALIF (COURIER)

AFBMD TECHNICAL EVALUATION STAFF, P.O. BOX 1567, VAFB, CALIF (COURIER)

SECRET/WDC-16-6 -1-82 (1053)

LOSA FOR WDZY; 6594TH TW FOR LT COL MATHISON; LMSD,

SUNNYVALE, FOR DEPT 61-44 (L. F. MORGAN); LMSD/VAFB

FOR DEPT 65-44 AND 61-70; DAC FOR R. PURDY. INFO:

1MD FOR COMMAND POST; AFBMD TECH EVAL STAFF FOR

MR. PISCHEL. SUBJECT: FOLLOW-ON REPORT TO FLASH

DATE	TIME
1	
MONTH	YEAR
JUL	1960

SYMBOL

WDC-16-6

WERNER J. HEISLER, Maj, USAF

PHONE 8-6734

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SIGNATURE

TYPED (or PRINTED) NAME AND TITLE

WILLIAM F. HEISLER, Lt Col, USAF
Chief, Satellite Systems Division

DD FORM 173

MAY 55

REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

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JOINT MESSAGEFORM - CONTINUATION SHEET

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FROM

CHIEF, AFEMD FIELD OFFICE, VAFB, [REDACTED]

REPORT OF LAUNCHING OF DISCOVERER XII (NIGHT SHIFT PRESTO) FROM VANDENBERG AFB.

1. PRE-LAUNCH PHASE:

1.1- DISCOVERER XII COUNTDOWN WAS INITIATED AT 0445 PDT ON 29 JUNE 1960. THE COUNTDOWN PROCEEDED SMOOTHLY BUT SLOWLY UNTIL T-160 AT 0820 PDT DURING TASK 6 WHEN AN OPERATIONAL HOLD WAS IMPOSED TO PERMIT THE WORK TO CATCH UP WITH THE COUNT. THIS HOLD WAS RELEASED AT 0950 PDT JUST PRIOR TO INITIATION OF TASK 11. HOWEVER, IN TASK 8 THE ACID TRUCK PUMPING SYSTEM FAILED TO OPERATE AND NECESSITATED REPLACEMENT WITH THE RESERVE TRUCK. DIFFICULTIES WERE ALSO EXPERIENCED WITH THE FUEL TRUCK PUMPING SYSTEM. THIS PROBLEM WAS CLEARED BY CYCLING THE VALVE ON THE DOWN STREAM SIDE OF THE PUMP. THE COUNT PROGRESSED UNTIL T-70 AT 1120 PDT AT WHICH TIME A SECOND HOLD WAS IMPOSED IN ORDER TO PERMIT THE WORK TO CATCH UP WITH THE COUNT WHICH WAS DELAYED DUE TO BAD WEATHER CONDITIONS. THIS HOLD WAS RELEASED AT 1350 PDT AND THE COUNT PROCEEDED NORMALLY FOR A LIFT OFF AT 1500:44 PDT. THE REQUIREMENT FOR AN OPERATIONAL HOLD AT THE END OF PHASE II IN THE

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TERMINAL COUNT WAS WAIVED.

2. EXIT PHASE:

2.1. DURING THE FIRST PART OF THE LAUNCH PHASE.

THE SEQUENCE OF EVENTS OCCURRED AS FOLLOWS:

LIFT-OFF: 1500:44.5 PDT.

MECO: 1503:26.6.

VECO: 1503:36.0.

SEPARATION: 1503:48.2.

ORBITAL STAGE IGNITION: ACTUAL - 1505:23.6; NOMINAL - 1505:33.8.

ORBITAL STAGE BURNOUT: 1507:22.2.

INERTIAL VELOCITY AT MECO: NOMINAL - 13,523 FPS;
ACTUAL - 13,300 FPS.

INERTIAL VELOCITY AT SEPARATION: NOMINAL - 12,601
FPS; ACTUAL - 12,400 FPS.

THE ABOVE TIMES WERE TAKEN FROM LMSD, VAFB, TM
OSCILLOGRAPH RECORDS. THE VEHICLE VELOCITIES AND
POSITIONS WERE TAKEN FROM THE PT MUGU VERLORT RADAR
RECORDS (PUNCHED TAPE AND SUNNYVALE COMPUTER
READOUTS) AND VERIFIED BY PMR FPS-16 DATA.

2.2. THE THOR BOOSTER PERFORMANCE WAS SLIGHTLY
BELOW NOMINAL IN VELOCITY ATTAINMENT AT MECO BUT

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WELL WITHIN THE THOR PERFORMANCE SPECIFICATIONS.
THE ENGINE PERFORMANCE OF THE AGENA WAS ALSO
NOMINAL IN ALL RESPECTS.

2.3. COMMAND 5 (DELAY IGNITION) WAS SENT AND
RECEIVED FOR A DURATION OF 25.6 SECONDS. HOWEVER,
THERE WAS AN ADDITIONAL DELAY IN IGNITION DUE TO
ACTION OF THE FAIRCHILD "H" TIMER FOR 2.4 SECONDS FOR
A TOTAL EFFECTIVE DELAY OF IGNITION OF 28.0 SECONDS.
COMMAND 6 (REDUCTION IN VELOCITY TO BE GAINED) WAS
SENT AND RECEIVED FOR A DURATION OF 1.3 SECONDS.
ORBITAL STAGE SHUT-DOWN OCCURRED BY COMMAND FROM
THE GUIDANCE AND CONTROL SYSTEM.

2.4. ORBIT WAS NOT ACHIEVED. THE INJECTION
INERTIAL VELOCITY OF 25,650 FT/SEC AT AN ALTITUDE OF
105 STATUTE MILES WOULD HAVE BEEN SUFFICIENT FOR
ORBIT HAD THIS VELOCITY BEEN ACCOMPANIED BY APPROXI-
MATELY A 0.0 DEGREE FLIGHT PATH ANGLE. HOWEVER,
THE RESULTING FLIGHT PATH ANGLE WAS APPROXIMATELY
-6 DEGREES WHICH CAUSED THE FAILURE OF THE AGENA
TO ORBIT. THE NEGATIVE AGENA VEHICLE ATTITUDE
RESULTED FROM ERRATIC PERFORMANCE OF THE HORIZON
SCANNER PITCH CHANNEL.

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5. THE FLIGHT PATH DEPARTURE AZIMUTH WAS THE NOMINAL 172 DEGREES.

3. RADAR AND TELEMETRY:

3.1. GOOD TRACK WAS ACHIEVED BY THE LMSD PT MUGU RADAR FROM ACQUISITION UNTIL ABOUT T+440 SECONDS WITH FINAL LOSS OCCURRING AT T+460 SECONDS. THE LMSD VAEB RADAR HAD GOOD TRACK UNTIL T+164 SECONDS, AT WHICH TIME IT WENT PASSIVE BY A PRE-ARRANGED PROCEDURE. SIGNAL WAS LOST AT T+420 SECONDS.

3.2. TELEMETRY RECEIVING AND RECORDING WERE SATISFACTORY AT BOTH VAEB AND PT MUGU. THE DOWN RANGE TM SHIP HAD A SIGNAL RECEPTION FOR APPROXIMATELY 676 SECONDS WHICH IS OF GREATER DURATION THAN NORMAL.

5. PAD DAMAGE:

5.1. THIS WAS THE SEVENTH LAUNCH FROM PAD 4. PAD DAMAGE WAS OF THE SAME MAGNITUDE AS THE LAST SEVERAL LAUNCHES, ALL OF WHICH HAD ONLY SLIGHT PAD DAMAGE. UNLESS DELAYED BY UNION ACTIVITIES A PAD RECOVERY TIME OF 4 TO 5 WORKING DAYS IS EXPECTED.

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